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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,600	12/17/2003	Robert G. Mejia	200310973-1	5838

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INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

HALEY, JOSEPH R

ART UNIT	PAPER NUMBER
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2627

NOTIFICATION DATE	DELIVERY MODE
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01/15/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/736,600

Applicant(s)

MEJIA ET AL.

Examiner

Joseph Haley

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 13-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

Claims 1-12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 8-16 of copending Application No. 10/827370. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitation "device associated with one of the cantilever and the medium" is met by the limitation in claim 1 of 10/827370 which recites a "device associated with the cantilever". Alternatively, claims 1-3 and 8-16 of Application No. 10/827370 are not distinct from claims 1-12 of the instant application. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitation "device associated with the cantilever" of Application No. 10/827370 is met by the limitation in claim 1 of the instant application which requires "a device associated with one of the cantilever and the medium".

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Binnig et al. (US 7054257).

In regard to claim 1, Binnig et al. teaches a cantilever (fig. 2 element 11) disposed with a medium which is movable relative to the cantilever (fig. 2 element 16); a device associated with one of the cantilever and the medium and which is configured to be responsive to changes in electrical field between the medium and the cantilever caused by a change in distance between the medium and the cantilever (column 7 lines 10-30 and fig. 3 element 25. see also column 18 lines 59-67 and column 19 line 1 and fig. 9); a heater disposed on the cantilever for selectively heating the medium and for inducing localized topographical changes which represent bits of data (column 6 lines 65-67 and column 7 lines 1-2 see also fig. 4b element 36); and a circuit which electrically interconnects both of the device and the heater (see fig. 4b).

In regard to claim 2, Binnig et al. teaches wherein the circuit forms at least a part of one of the device (see fig. 4b).

In regard to claim 3, wherein the circuit has portions which are common to both the device and the heater (There must be portions connecting the read element 25 of Binnig et al. and the heater).

In regard to claim 4, Binnig et al. teaches wherein the cantilever comprises a probe which extends from the cantilever and which is configured to be contactable with a surface of the medium and to respond to a topography of the medium to cause the distance between the cantilever and the medium to vary (fig. 2 element 13).

In regard to claim 5, Binnig et al. teaches wherein the medium is electrically non-conductive and is supported on an electrically conductive substrate (column 6 lines 62-64).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binnig et al. in view of Azuma et al. (US 6477132).

In regard to claim 6, Binnig et al. teaches all the elements of claim 6 except wherein the device is a FET (Field Effect Transistor).

Azuma et al. teaches wherein the device is a FET (Field Effect Transistor) (column 18 lines 29-37).

The two are analogous art because they both deal with the same field of invention of recording on a medium

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the apparatus of Binnig et al. with the FET's of Azuma et al. The rationale is as follows: At the time of invention it would have been obvious to provide the apparatus of Binnig et al. with the FET's of Azuma et al. because FET's can act as switches that are small and use very little power.

In regard to claim 7, Azuma et al. teaches wherein the circuit comprises a plurality of electrically conductive traces which are formed in the cantilever and which comprise a source and a drain of the FET and wherein the source or drain of the FET forms part of a circuit which supplies electrical current to the write/read tip (fig. 1).

In regard to claim 8, Azuma et al. teaches wherein the plurality of electrically conductive traces further comprise a channel interposed between the source and the drain of the FET (see fig. 1 the wire connecting the source and the drain. There also must be a connection within the source and drain within the FET).

In regard to claim 9, Binnig et al. teaches wherein the cantilever is made of silicon and the electrically conductive traces are formed by doping the silicon to render selected regions electrically conductive (column 6 lines 56-59).

In regard to claim 11, Binnig et al. teaches wherein the cantilever has a pair of arms which are interconnected by a bridge member (fig. 5 element 45), wherein the probe is formed on the bridge member (fig. 5 element 47), wherein the heater is formed on the bridge member and wherein the doped traces are formed on both arms (see fig. 4b element 39 and column 6 lines 56-59).

In regard to claim 12, Binning et al. teaches feeding a heater element with a current (see figs 4 and 5). Azuma et al. teaches feeding the probe with a current driven by a FET (fig. 1 elements 201-205).

Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binnig et al. in view of Azuma et al. further considered with Mamin et al. (US 5729026).

In regard to claim 10, Binning et al. and Azuma et al. teach all the elements of claim 10 except wherein the heater comprises a doped region having an electrical resistance which is higher than the traces.

Mamin et al. teaches wherein the heater comprises a doped region having an electrical resistance which is higher than the traces (fig. 1d elements 123 and 125).

The three are analogous art because they all deal with the same field of invention of recording on a medium.

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the apparatus of Binnig et al. with Azuma et al. and the doped heater of Mamin et al. The rationale is as follows: At the time of invention it would have been obvious to provide the apparatus of Binnig et al. provide the apparatus of Binnig et al. with Azuma et al. and the doped heater of Mamin et al because it can be easily manufactured (column 4 line 7).

Response to Arguments

Applicant's arguments filed 10/18/07 have been fully considered but they are not persuasive. Applicant's argues that "[t]here is no teaching or suggestion in Binnig of a device that is associated with both the cantilever and the medium that is responsive to changes in the electrical field between the medium and cantilever caused by a change in the distance between the two". The examiner maintains this rejection because the claim requires the device to be associated with either the device or the heater. The

limitation requiring the device to be responsive to changes in the electrical field between the cantilever and the medium is taught in column 18, lines 59-67 and column 19, line 1 of Binning et al.

On page 10, applicant argues that Azuma does not teach "wherein the circuit comprises a plurality of electrically conductive traces which are formed in the cantilever and which comprise a source and a drain of the FET and wherein the source or drain of the FET forms part of a circuit which supplies electrical current to the heater".

However, the examiner maintains this rejection because Azuma et al. teaches a FET that is used as a read/write tip. The FET is merely supplied to show that a FET can be used to supply current to a read/write tip. Nowhere does the examiner state it acts as a heater.

In regard to the electrically conductive traces, the examiner points to the source and drain of the FET.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Haley whose telephone number is 571-272-0574. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jrh

A handwritten signature in black ink, appearing to be 'W. Korzuch', written in a cursive style.

/William Korzuch/
SPE, Art Unit 2627